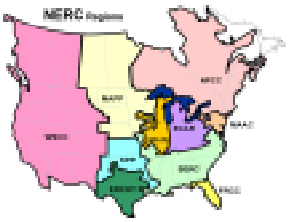
NERC MAP



"CHANGING ENERGY MARKETS IN THE MIDWEST"

OR

"IT CAN'T HAPPEN HERE!"

It's Unlikely to happen here

- Three reasons:
- Utilities have NOT been required to sell their generation plants to independent owners.
- Utilities ARE allowed to make long-term commitments for power.
- MAIN specifies a minimum reserve margin and AUDITS members for compliance.

MAIN AUDIT

SUMMER CAPACITY SITUATION

Designed to Identify Summer Supply Deficiencies & Resulting

- After-the-fact finger pointing
- After-the-fact monetary penalty proposals
- Time consuming re-creation of data
- Costly litigation

Implementation of Reserve Audit Process

- Develop uniform template for data collection
- MAIN staff and consultant teams conduct formal on-site audits of members
- Confidentiality statements signed by auditors
- Time allowed for resolution of disputed and incomplete items

Details of audit template--Load

- Entity's forecast load for the peak summer period
- Previous year's load with extrapolation to current year with explanation of changes
- Interruptible loads and demand-side management

Details of audit template-Capacity

- Capacity of owned or committed units
  - as validated by MAIN standard tests
- Net of firm purchases or sales
  - contracts reviewed by auditors
  - cross check sales and purchases

Reserve

- Reserve = capacity - load
- Reserve margin = reserve/load--%
- Capacity margin = reserve/capacity--%

How Much is Enough?

- MAIN required reserve margin is 17%
- Based on one-day-in-ten-years LOLE

»What's LOLE??

LOLE

- LOLE means loss of load expectation. A loss of load expectation of one day in ten years means that the probability is that, on average, there will be one day in a ten year period when there is insufficient capacity to serve the load.
- A one day in ten years "standard" is commonly used in the industry

How is LOLE calculated? Consider the following items:

- Load
  - projected peak load
  - daily load profile
- Capacity
  - generating capacity
  - net of firm purchases and sales
  - generator failure rates
  - generator maintenance schedules

Reserve margin v. LOLE

- (representative table)

LOLE	Reserve margin
1/20	21%
1/10	17%
1/5	14%
1/1	10%

DEMAND SUMMARY

(AS OF MARCH 1, 2001)

- Estimated load 53,900 MW
- Less interruptibles, DSM (2,770)
- Net firm load 51,130 MW
- ----------
- 2000 summer peak 52,687 MW
  (340 MW interruptibles curtailed)
- Adjusted growth rate = 1.6 %

GENERATION SUMMARY

(AS OF MARCH 1, 2001)

- "Owned" generation-- 2000 58,102 MW
- New generation -- 2001 1,828
- Unavailable generation 0
- Net firm purchases 986

- Total firm resources 60,196 MW

RESERVE CAPACITY

(PROJECTED AS OF MARCH 1, 2001)

- Firm resources 60,916 MW
- Net firm load 51,130
- Reserve capacity 9,786 MW

- Reserve margin 19%
- Capacity margin 16%
  - Plus: an additional 3000 MW of uncommitted new IPP capacity

Transmission Capacity

AS OF MARCH 1, 2001

- The transmission system for MAIN as a whole is judged to be adequate for a wide range of system conditions

Changes?

- 1997 and 1998: reserve margins were less than 17% and transmission system was judged to be marginally adequate
- 1999 and 2000: reliability criteria met
- 2001: conditions continue to improve